

## **MATERIALS AND METHODS FOR SIMULATING FOCAL SHIFTS IN VIEWERS USING LARGE DEPTH OF FOCUS DISPLAYS**

### **Abstract of the Disclosure**

5       A large depth of focus (DOF) display provides an image in which the  
apparent focus plane is adjusted to track an accommodation (focus) of a viewer's  
eye(s) to more effectively convey depth in the image. A device is employed to  
repeatedly determine accommodation as a viewer's gaze within the image  
changes. In response, an image that includes an apparent focus plane  
corresponding to the level of accommodation of the viewer is provided on the  
10   large DOF display. Objects that are not at the apparent focus plane are made to  
appear blurred. The images can be rendered in real-time, or can be pre-rendered  
and stored in an array. The dimensions of the array can each correspond to a  
different variable. The images can alternatively be provided by a computer  
controlled, adjustable focus video camera in real-time.